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NOAA COMPLETES ECOLOGICAL STUDY OF STELLWAGEN BANK NATIONAL MARINE SANCTUARY REGION

The National Oceanic and Atmospheric Administration recently released an online report, “An Ecological Characterization of the Stellwagen Bank National Marine Sanctuary Region,” containing a wealth of information about the Gerry E. Studds Stellwagen Bank National Marine Sanctuary and the Gulf of Maine region. The report summarized the results of a three-year collaborative research project conducted by NOAA’s National Centers for Coastal Ocean Science, providing a new regional look at the area’s rich marine ecosystems.

This NOAA study incorporated extensive data about the abundance and distribution of key species like humpback whales both within and beyond the boundaries of the sanctuary. By expanding the survey to include the entire Gulf of Maine, researchers were able to get a better idea of where marine resources are located in the region and how they relate to the sanctuary.

"One of the fundamental keys needed to implementing an ecosystem approach to management is knowing the critical components of that ecosystem and how they interact," states John H. Dunnigan, assistant administrator of NOAA's Ocean Service which oversees the National Marine Sanctuary Program. "This study represents an important gathering of information and facts about the Stellwagen Bank National Marine Sanctuary and the greater Gulf of Maine that will be important to managers as they work to maintain sustainable uses of this marine resource-rich area."

Among the findings of the report was the confirmation of a link between the distribution of humpback whales and sand lance, a small fish that is a favorite prey of the whales. While the location of humpbacks had long been thought to coincide with “ecological hotspots” containing high sand lance concentrations, the NCCOS survey confirmed the connection with solid data.

For the project, NCCOS researchers used data from previous scientific studies conducted by numerous organizations including NOAA Fisheries Service in addition to conducting new surveys, giving them a wider range of data than most traditional biogeography studies. They conducted an analysis of the distributions of selected fish, seabirds, and marine mammals in the study region, looked at regional contaminant accumulations, gathered data sets for use in geographic information systems, identified ecologically important areas, and created models of oceanographic, physical, and biological relationships in the study region.

“It is enormously helpful to be able to view the sanctuary in relation to the rest of the Gulf of Maine,” said Craig MacDonald, superintendent of Stellwagen Bank National Marine Sanctuary. “One of the things we find so valuable about this study is that it integrates massive amounts of data over long periods of time and over very large areas, and it uses that information to paint a coherent picture of predicted species distribution.”

The researchers created a series of maps of the Gulf of Maine for the final report, enabling them to display the data geographically and perform analyses of past and future biological patterns. This broad picture of the status and health of the local environment will be an important tool for sanctuary personnel as they continue their ongoing work to revise the sanctuary’s management plan, which serves as a framework for guiding future management and activities of the sanctuary.

“Using a comprehensive biogeographic approach in the Gulf of Maine region resulted in a more complete understanding of the marine resources and conditions within the Stellwagen Bank National Marine Sanctuary than just concentrating on sanctuary resources alone,” said Timothy Battista, project manager for the Stellwagen Bank ecological characterization and oceanographer with NCCOS’s Center for Coastal Monitoring and Assessment. “The resulting report and data products provide a valuable synthesis of decades of scientific research, to guide future marine research and decisionmaking in the region.”

The report is available on the NOAA website at http://ccma.nos.noaa.gov/products/biogeography/stellwagen/, and hard copies will be available from NOAA in the near future.

Stellwagen Bank National Marine Sanctuary encompasses 842 square miles of ocean, stretching between Cape Ann and Cape Cod offshore of Massachusetts. Renowned for its scenic beauty and remarkable productivity, the sanctuary supports a rich assortment of marine life, including marine mammals, more than 30 species of seabirds, over 100 species of fishes, and hundreds of marine invertebrates and plants.

The NOAA National Marine Sanctuary Program seeks to increase the public awareness of America’s marine resources and maritime heritage by conducting scientific research, monitoring, exploration and educational programs. Today, the sanctuary program manages 13 national marine sanctuaries and one marine national monument that together encompass more than 150,000 square miles of America’s ocean and Great Lakes natural and cultural resources.

The National Oceanic and Atmospheric Administration, an agency of the U.S. Commerce Department, is celebrating 200 years of science and service to the nation. From the establishment of the Survey of the Coast in 1807 by Thomas Jefferson to the formation of the Weather Bureau and the Commission of Fish and Fisheries in the 1870s, much of America's scientific heritage is rooted in NOAA.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 60 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts, and protects.

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On the Web:
NOAA: http://www.noaa.gov/
NOAA National Ocean Service: http://www.oceanservice.noaa.gov/
“An Ecological Characterization of the Stellwagen Bank National Marine Sanctuary Region”: http://ccma.nos.noaa.gov/products/biogeography/stellwagen/